DESTRUCTIVE FISHING:
Short-term gain, long-term loss

Coral reef fisheries are a vital source of protein for coastal communities throughout the tropics. In many areas, coral reefs are threatened by fishing practices that are an economical option for fishers in the short term, but destroy corals and the coral reef structure that fish and other reef organisms need to survive. These practices yield short-term economic benefits for fishers, but cause serious long-term damage and put the sustainability of fisheries and other reef-dependent industries at risk.

WHAT IS DESTRUCTIVE FISHING?

Dynamite fishing an poison fishing are the two most common forms of destructive fishing:

Dynamite fishing or "blast" fishing, is done easily and cheaply with dynamite or homemade bombs created from locally available materials. Fish are killed by the shock waves from the blast and are then skimmed off the surface or collected from the bottom by divers. These explosions not only kill large numbers of fish and other marine organisms in the vicinity, but they also destroy the physical structure of coral reefs. This physical structure is critical to the functioning of coral reef ecosystems and other coastal processes. On average, a 1-kilogram (35 ounce) beer bottle bomb can leave a rubble crater of approximately 1–2 meters in diameter. This results in 50–80 percent coral mortality. It can take hundreds of years for the physical structure of a coral reef to rebuild after being reduced to rubble by fishers using explosives.

Poison fishing, commonly referred to as "cyanide fishing," is another popular destructive fishing method used to capture live fish for the aquarium and food trades. Most fish caught using cyanide are sold in restaurants, primarily in Asia, where live fish are prized for their freshness. Fishers using this method dive down to the reef and squirt cyanide or other poisons in reef crevices to stun fish, making them easy to catch. Sodium cyanide and bleach are the most commonly used poisons; the impact of these poisons on the reef ranges from coral bleaching to death. The full extent of the impacts from poison fishing is unknown.

DESTRUCTIVE FISHING AND ITS IMPACT ON CORAL REEF ECOSYSTEMS

Blasting and poison fishing changes the coral reef food web, leading to lower biodiversity and a decrease in fish productivity. This results in a direct loss of fish abundance. As fishermen seek healthier fish stocks, reefs that are not blasted will experience increased fishing pressure. Often, too many fish are taken from one reef to sustain a population in that area resulting in the collapse of the fishery. Scientists estimate 36 percent of the world's reefs are overexploited from fishing. Recovery, if possible, could take decades.

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REEFS AROUND THE WORLD ARE SERIOUSLY THREATENED BY DESTRUCTIVE FISHING:

- Although it is illegal, dynamite fishing is widespread and practiced in up to 30 countries in Southeast Asia and Oceania.
- Scientists estimate that 56 percent of the coral reefs in Southeast Asia are at risk from destructive fishing practices.
- Over two-thirds of the reefs in the Philippines, Malaysia, and Taiwan and half of the reefs in Indonesia are impacted by destructive fishing.

DESTRUCTIVE FISHING AND THE COSTS TO SOCIETY

The cost of destructive fishing to society is overwhelming when measured by loss of life, coastal protection, and potential income from sustainable fisheries and tourism.

- **Loss of lives:** Bombs can explode prematurely and result in severe injury and death.
- **Loss of fishery jobs & income:** Large-scale poison fishing generates a net loss to Indonesia of US $46 million over four years. A sustainable fishery can produce jobs for approximately 10,000 Indonesia fishers for many years and generate upwards of US $321.8 million in income over a 25-year period. When harvested sustainably, live fish from a healthy coral reef in Southeast Asia can amount to 0.55–1.1 tons (0.5–1 tonnes) a year with an annual net benefit of US $2,500–$5,000 per square kilometer (0.3 square nautical miles).
- **Loss of coastal protection and tourism:** For example, in Indonesia the net cost from loss of coastal protection and tourism is US $46 million over a 25-year horizon.

HOW CAN WE STOP DESTRUCTIVE FISHING?

1. **Enforce the Law.** Many countries have laws, but they are not enforced. To improve compliance, a multi-faceted approach is needed: increase enforcement, raise local and national awareness, and educate fishers on alternative fishing methods.
2. **Create Marine Protected Areas (MPAs).** Create more MPAs and improve the management of existing MPAs. This includes patrolling the area for illegal fishing practices and creating "no-take" MPA zones.
3. **Regulate the International Trade of Live Fish & Other Live Reef Organisms.** At the international level, countries need to work together to regulate the export and import of fish, and to identify and endorse live reef organisms caught in a sustainable manner. The Marine Aquarium Council (MAC) is an organization working on the certification of live fish and reef organism trade.
4. **Create Alternative Livelihoods.** We need to invest in creating alternative livelihoods for local fishers and create opportunities in non-extractive industries such as sustainable tourism.
5. **Adopt the U.N. Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries.** Adopted by the FAO in 1995, this has helped modify national fisheries laws by creating a Code of Conduct in cooperation with governments, NGOs, and industry in support of sustainable aquaculture, fisheries operations, fisheries management, fish processing, and trade.

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